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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,086	09/20/2001	Rajiv Doshi	19441-0034	5046

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EXAMINER

CHANEY, CAROL DIANE

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,086

Applicant(s)

DOSHI ET AL.

Examiner

Carol Chaney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 December 2004 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support for the term "nonreactive manifold" recited in claims 1-11 has not been found in the specification as originally filed, and therefore the inventors are not considered to have possession of the instantly claimed invention at the time the application was filed.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 9, and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Grimble, US Patent 4,729,931 for essentially reasons of record. Applicant has amended claim 1 to recite a "non-reactive" manifold where heat is exchanged between fuel fluid and oxidant fluid. As noted previously, Grimble recites a "manifold" (5) which is also a solid oxide fuel cell. Although a fuel cell is configured to allow the reaction of fuel and oxygen, the fuel cell *per se* is non-reactive. As is well-known in the art, the fuel cell allows transport of oxygen ions, and the electrode surfaces may catalyze the dissociation of gases, but the cell itself does not take part in any reactions. Thus the manifold (5) of Grimble is nonreactive, and has been discussed previously, the limitations of applicants' claims are met.

With regards to claim 28, Grimble shows using a fuel cell to generate power. Grimble shows combusting exhaust gas from the fuel cell stacks in exhaust plenums (7). (See Grimble, column 2, lines 30-39.) A first heat is exchanged between the exhaust gas in exhaust plenum (7) and oxidant gas in the portion of the air feed tube (6) within the exhaust plenum. Clearly, this will occur without the oxidant and fuel reacting. A second heat is exchanged between the fuel fluid and the oxidant fluid through cell (5). The apparatus disclosed by Grimble is enclosed in a thermal enclosure (1).

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Claims 11-16, 20, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Schuler, US Patent 6,303,243 for reasons of record.

Claim Rejections - 35 USC § 103

Claims 6, 10, 27, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimble in view of Barton et al., US 2003/0022050 A1 for reasons of record.

Claims 7, 8, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimble in view of Morrow, Jr. et al., US Patent 4,087,076 for reasons of record.

Claims 17-19, and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuler, in view of Piascik et al., US Patent 6,291,08 for reasons of record.

Response to Arguments

Applicant's arguments filed 20 December 2004 have been fully considered but they are not persuasive.

With regards to the rejections over Grimble, applicant asserts Grimble does not disclose a "non-reactive" manifold. As discussed above, the manifold is disclosed by Grimble is non-reactive. The manifold does not undergo any reactions, and is thus non-reactive.

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With regards to the rejections over Schuler, applicants assert that in the Schuler reference "no fluid is delivered from the second interior cavity (6)". As noted by the applicants, fluid is delivered via a supply line (81'). As shown in Schuler Fig. 2, supply line (81') is a component of second interior cavity (6). Since supply line (81') is a part the second interior cavity, fluid is delivered from the second interior cavity.

With regards to applicants' traversal of the rejection of claims 6, 10, 27, 33-35 under 35 U.S.C. 103(a) as being unpatentable over Grimble in view of Barton et al., US 2003/0022050 A1, applicants asserts fluid communication between a fuel vaporizer and the source of fuel, the fuel storage tank, is not inherent. The examiner respectfully disagrees, because without fluid communication between the fuel vaporizer (shown by Schuler) and a fuel tank such as taught by Barton et al., the fuel cell would have no source of fuel. Thus fluid communication between a fuel vaporizer and the system source of fuel is inherent because without fluid communication, the cell could not operate.

With regards to applicants' traversal of the rejection of claims 7, 8, 36, and 37 under 35 U.S.C. 103(a) as being unpatentable over Grimble in view of Morrow, Jr. et al. applicants argue 'it is not clear how the open apertures of Grimble could accommodate the use of a vacuum chamber as shown in Morrow.' Morrow et al. disclose the most effective insulation for high temperature electrolytic devices consists of multi-layer radiation shields in a vacuum, and teaches a molybdenum-zirconia cloth will provide multi-layer vacuum insulation. (See Morrow et al., column 7, lines 37-47.) These statements describe effective types of insulation materials. Morrow does not illustrate

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operation of a fuel cell or electrolytic cell in a "vacuum chamber". Morrow teaches vacuum insulation is an effective insulation material. It would have been obvious to one of ordinary skill in the art to use a vacuum-multilayer insulation in the invention of Grumble because Morrow et al. teach this is an effective insulation for a fuel cell system. The use of a vacuum-multilayer insulation material as an additional layer around, or as a substitute for, housing (1) of the Grumble invention would not render the operation of the Grumble fuel cell unsatisfactory.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (571) 272-1284. The examiner can normally be reached on Mon - Fri 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Carol Chaney
Primary Examiner
Art Unit 1745

6 March 2005